

## REMARKS

Claims 1, 2, 4-12 and 14-20 have been rejected under 35 U.S.C. 102(e) as anticipated by the patent to Bassett Jr. et al, 6,543,241; and claims 3 and 13, as "obvious" modifications thereof under 35 U.S.C. 103(a) since two-dimensional electrophoresis (per se) is known.

The Office correctly points out in connection with applicant's claim 1, that the patent to Bassett Jr. et al, in Fig. 2,

"discloses the generation of an image derived from the analysis of genes or proteins...the usage of a scanning device which scans the image...then stored in a database...(and that) can subsequently be retrieved for various forms of analysis".

The Office is also correct, in connection with claim 2, that this patent also states that "the image may be derived from a polymerase chain reaction that involves an electrophoresis separation".

This, however, is actually where the similarity to applicant's invention ends.

Applicant's conception, indeed, goes far beyond what can be achieved with the system and technique of Bassett Jr. et al, and his claims, particularly in their currently amended forms, define over this patent system and its results, as will now be demonstrated.

First, as stated on pages 2 and 3 and elsewhere in applicant's specification, the object of applicant's invention, preferably through using two-dimensional electrophoresis ("TDGS") spot patterns of gene fragment separation and base pair sequences "uniquely identified in the spot pattern by x-y coordinates", is now to enable for the first time

"standardizing the spot pattern image formats attained by academics and industrial organizations that are focused on large population genetic studies and gene discovery research",

through making possible

"the generation of a centralized database or library of such images and the establishment of a network for centrally storing,

exchanging, analyzing and comparing gene spot pattern image data so generated; this, for the first time, enabling the transforming of raw genetic data into routinely applicable marker systems for clinically and/or economically important traits...".

The secret to this achievement resides in the fact that TDGS spot patterns (page 4) are

"produced through the use of uniform reaction conditions...(and) are gene specific and industrial specific and they readily lend themselves to image analysis based on interpretation of results because the spot patterns are also product specific..."

Further, that in applicant's system, moreover,

"TDGS assay kits are provided to the researchers, and standardized spot pattern image formats are established for installing the database compilation, storage and analysis" (page 6).

This novel standardized spot pattern image format [---

"images...formatted into a standardized form" (size, contrast, etc.)-page 8]

enables

"highly reproducible and uniform results...to enhance the archiving and retrieval of the images in the data-base system. Spot patterns submitted from labs all over the world for the same of gene, but for a different population (differing by individual) will be stored in this data-base reference tool" (page 10).

This standardized spot pattern format of the invention not only makes possible this world-wide image data-base and image comparison facility, but it certainly is not taught in the patent to Bassett Jr. et al, where, indeed, the graphs and other disparate patterns used (--Fig. 2, incidentally, is merely a "Prior Art" DNA micro array image--), lay no basis even for a conception, let alone an actual disclosure, of applicant's concept of a standardized format database; and certainly not an appreciation of the particular adaptability for the same of two-dimensional electrophoretic TDGS pattern operation.

Without applicant's invention, indeed, there is no way the stored spot pattern images could be conveniently just overlayed, for example, for ready "comparison and analysis", including by the "optical techniques" referenced on page 8 of applicant's specification.

Claims 3 and 13, which are specific to the above, can thus hardly be said to be just "obvious" changes in the system of the patent to Bassett Jr. et al.


Claims 1, 2 and 4 -11 and 12-20 have been amended even more clearly to distinguish from Bassett Jr. et al in reciting the novel and critical "standardized format image spot patterns "for the image database, and newly presented dependent claims 21 and 22 specify a standardized format of size and contrast for the purposes of applicant's invention.

Reconsideration and allowance, particularly of the claims in their amended form, therefore appear appropriate, and are respectfully requested.

Any costs required by this filing, included for any required extensions of time, petition for which is hereby made, may be charged to account 18-1425 of the undersigned counsel.

Respectfully submitted,

RINES AND RINES

By:   
Robert H. Rines,  
Attorney for Applicant  
Reg. No. 15932

Date: July 16, 2003  
Rines and Rines  
81 North State Street  
Concord, N.H. 03301  
Reg. No. 15,932  
Tel. (603) 228-0121